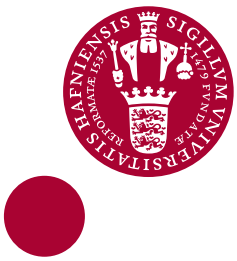

Pathway out of poverty for upland communities in Nepal: “high altitude gold” and its development potential

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Yarsagumba collector

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Introduction

In Nepal, highland communities are reaping incomes, which were unthinkable only 15 years ago. The collection and trade of yarsagumba (*Ophiocordyceps sinensis*) has contributed to larger economic transformations than any development scheme has ever done in the region. Endemic to the grasslands and alpine meadows of the Tibetan Plateau and high valleys of the Himalaya, yarsagumba is a fungus-caterpillar complex, which has a long history of use in Tibetan and Chinese medicines, prescribing it as a powerful tonic. More recently, its aphrodisiac properties have been the main factor driving a surge in Chinese demand and the associated sharp increase in price. Currently, a single 5 cm long piece of yarsagumba, weighing a fraction of a gram, is said to cost up to 50 USD in retail shops in China; this price is currently higher than the price of gold on the international market.

Yarsagumba collectors have managed the resource on their own to a high degree, without any policy support in Nepal or support from external donors, to the point that some researchers have called this an "indigenous form of 'sustainable development'" (Childs and Choedrup, 2014). In this brief, we summarize results from a study quantifying yarsagumba collectors' income and discuss possible ways of maintaining and increasing local incomes from yarsagumba trade. Filling in this knowledge gap is essential to support yarsagumba-related development initiatives in high altitude regions of Nepal.

Recent published research by Pouliot et al. (2018) contributes to answering these questions. It is based on intensive field work in Darchula District of Nepal (Figure 1) for the case year 2014-2015. All Village Development Committees where yarsagumba is collected were visited, and collector focus group discussions (n=7), individual collector interviews (n=56), traders interviews (n=45, all yarsagumba traders in Darchula), and central wholesalers interviews (n=9, all yarsagumba central wholesalers in Nepal) were conducted.

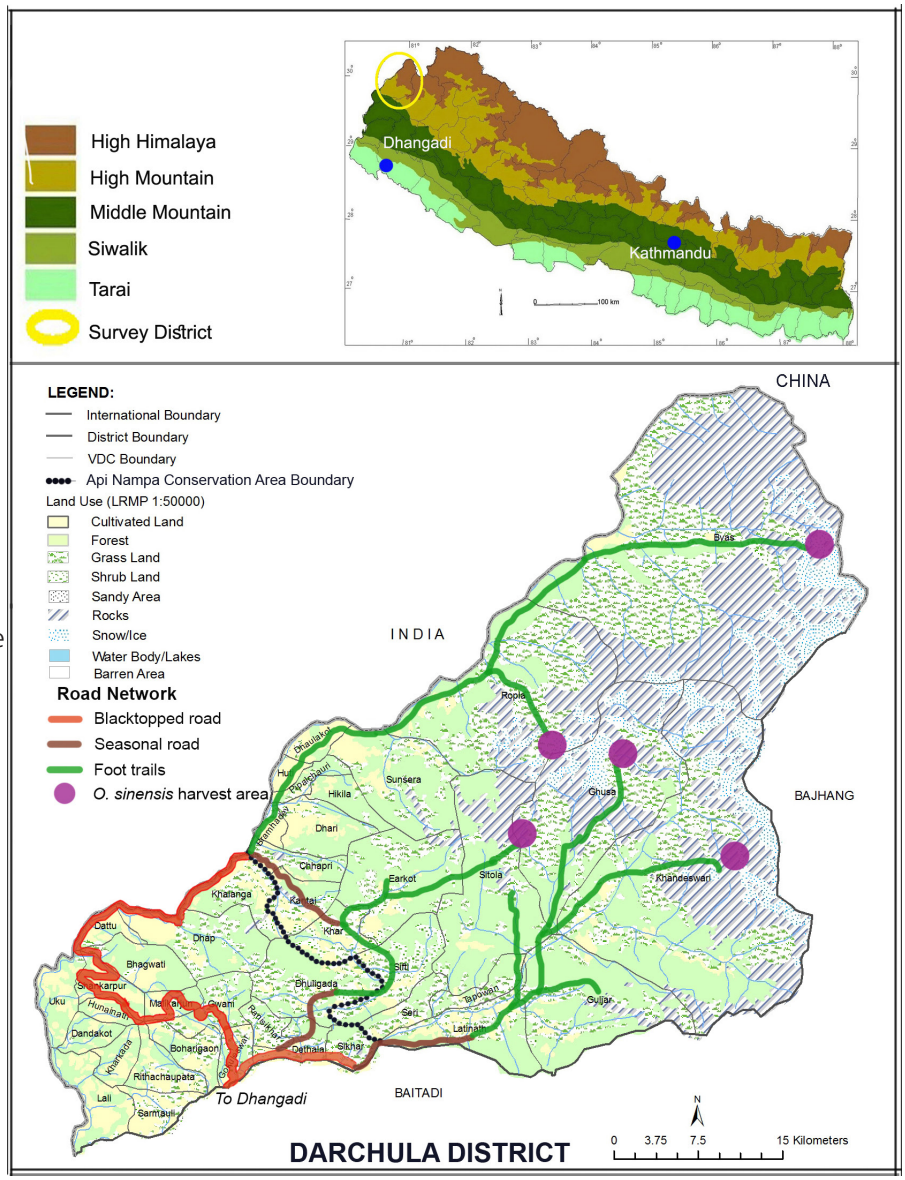

Figure 1. Darchula District with road and trail infrastructure, and location of main yarsagumba collection areas (purple dots). Map adapted from MoFALD (2017), infrastructure and collection areas added based on empirical observations.

The flow of yarsagumba from Darchula District of Nepal

Every year when the snow melts in the lower alpine meadows of Darchula, from around 3500 masl, around mid-May, thousands of men, women, and children move from their home village to tented camps close to collection areas. In the 2014-2015 case year, the average number of days spent per collector for yarsagumba collection was around 37. To facilitate collection and establish relationships with collectors, traders provide pre-collection advance payments. The relationship between collectors and traders is based on trust and all advance payments are given based on oral agreement.
While some trade takes place directly in collection areas, most collectors transport their harvest to the nearest road head village by foot where it is sold to traders. From there, products are transported by jeep or bus to towns such as the district headquarter of Dhangadi and then by bus or airplane to Kathmandu, the national capital, where most central wholesalers are located. From Kathmandu, the products are transported to China (Lhasa, Kunming, Guangzhou, Shanghai, Beijing and Hong Kong).

Yarsagumba worth USD 4.7 million for collectors in Darchula District

In 2014-2015, yarsagumba collectors in Darchula generated USD 4.7 million in profit by selling the 384 kg of yarsagumba collected in the district; this income, even though not equally distributed across the district, is huge for Darchula which has an annual budget of USD 4.2 million (DDC Darchula, 2015) and a population of 133,464. The yarsagumba income is largely unrecorded in official statistics as markets are informal and operate through private treaty trading (buyer and seller negotiating prices and other terms of trade).

Around 5200 collectors were involved in the collection of yarsagumba in Darchula District in the case year, on average generating around USD 900 per person. Yarsagumba is the sole source of cash income for most collectors and its commercialisation has revived the trade component of traditional high altitude livelihoods, which had otherwise declined following restrictions at the Tibetan border and the expanding infrastructure in both Tibet and Nepal that eroded the traditional comparative advantage of high altitude communities trading products between the nomads of Tibet and the farmers of Nepal (e.g. Bauer, 2004). Most yarsagumba from Darchula is traded through Kathmandu-based central wholesalers who facilitate trade into China.

What makes yarsagumba a potential tool for poverty alleviation in Nepal?

Collection of yarsagumba does not require any sophisticated technology and capital. Still, it appears that local communities in mountainous regions of Nepal like Darchula have until recently been able to retain control over their yarsagumba resources. How has this been possible?

Collection of yarsagumba is done on government-owned, community-managed alpine meadows, and collectors need the ability to work and live at high altitude under harsh conditions for extended periods. Moreover, despite several attempts at establishing cultivation of yarsagumba, the resource is still only collected in alpine meadows in Tibet, Bhutan, Nepal, and India. While non-mountain dwellers in Nepal are attracted to the high incomes linked to yarsagumba collection, few are able to live and work competitively at high altitude. Hence, the product's altitudinal range, coupled with the technological and ecological barriers related to its cultivation, provides a

Recommendations for policy and future research

- Given the potential of yarsagumba to alleviate poverty in remote areas that have not benefitted from development interventions in the past, national political attention should be focused on measures to maintain and increase collector incomes. Such interventions should be oriented towards:

  - Minimizing bureaucratic interventions such as collection and transport permits, that serve to increase costs for collectors and traders, which are not based on documentation that harvest is unsustainable.

  - Ensuring that yarsagumba incomes mainly benefits collectors, traders, and local communities.

  - Establishing a clear legal framework for regulating access to yarsagumba collection sites, for example by formally handing over alpine meadow management rights to local communities.

  - Research to understand how yarsagumba availability and ecological sustainability in the wild is changing (due to factors such as yarsagumba collection, and livelihood and climate changes in the Himalayas). This will help to develop collection guidelines that enable upland communities in Nepal to maintain this livelihood activity in their portfolio in the future.

- Research to close the knowledge gap surrounding the drivers of demand for yarsagumba and enable collectors, traders, and central wholesalers to adjust their production and processing to the increasing demand and its changing drivers.

distinct comparative advantage for mountain-dwellers in the market. Buyer-supplier relationships in the yarsagumba production network are highly trust-based; trustworthiness is established over time in connection to successful transactions and lack of established relationships is a barrier to entry for new traders and central wholesalers. Yarsagumba income is used for capital investment in upland Nepal (Shrestha and Bawa, 2014), including the construction of better houses, education of children, purchase of healthcare and food, indicating the potential of this trade to contribute to poverty alleviation.

Threats to yarsagumba collectors' livelihoods

The traditional control of high altitude resources by upland communities is under pressure. Lowland communities have started to restrict upland communities' access to winter grazing areas at low altitude as a way to negotiate their access to upland yarsagumba collection areas. This inevitably affects high altitude livelihoods for which livestock rearing is a key subsistence and cultural pillar. The lack of a clear legal framework for regulating access to yarsagumba, coupled with the large number of actors involved in the market, could lead to rent seeking and to the exacerbation of conflicts surrounding access to collection areas, with a potential reduction of income and benefits for upland collector communities.

Very little is known about the ecological sustainability of current levels of yarsagumba collection. Several collectors in Darchula have mentioned that the volume of their yearly collection has decreased over the past years, but it is unclear whether this is due to an increased number of collectors in the district or to a decrease in yarsagumba availability.

End consumer products and drivers of demand for Nepalese yarsagumba remain unknown and undocumented, despite evidence indicating that Tibetan yarsagumba is used as an aphrodisiac in China. Hence, collectors, traders, and central wholesalers are unable to adjust their production and processing to the demand of end consumers. Establishing a processing industry in Nepal would enable the country to benefit from value addition.

Given the economic importance of yarsagumba to high altitude households, public policy interventions should aim to maintain and increase this income. The recent Government of Nepal yarsagumba management directive (MFSC, 2017) is oriented towards regulating collection and trade through permits and rules on collector behaviour based on the assumption that collection is unsustainable. There is, however, no evidence that yarsaguma collection is ecologically unsustainable. This indicates a need to reorient government attention towards measures that will act to sustain or increase collector incomes while maintaining the resource base and avoiding relocation of benefits to non-collectors.

Pieces of yarsagumba

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